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Cockrell et al.

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(54) **HOME AUTOMATION SYSTEM AND METHOD INCLUDING REMOTE MEDIA ACCESS**

(71) Applicant: **AT&T INTELLECTUAL PROPERTY I, L.P.**, Atlanta, GA (US)

(72) Inventors: **Roger A. Cockrell**, San Antonio, TX (US); **Steven Michael Wollmershauser**, San Antonio, TX (US); **Thomas S. Webster**, Mystic, CT (US); **Brian Wilson**, San Antonio, TX (US); **Alison Raphael**, Campbell, CA (US)

(73) Assignee: **AT&T INTELLECTUAL PROPERTY I, L.P.**, Atlanta, GA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 189 days.

This patent is subject to a terminal disclaimer.

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(22) Filed: **Oct. 6, 2016**

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Related U.S. Application Data

(63) Continuation of application No. 13/532,095, filed on Jun. 25, 2012, now Pat. No. 9,473,324, which is a (Continued)

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H04L 29/06 (2006.01)
H04L 12/66 (2006.01)

(52) **U.S. Cl.**
CPC ***H04L 65/60*** (2013.01); ***H04L 12/66*** (2013.01); ***H04L 65/1023*** (2013.01); ***H04L 67/42*** (2013.01)

(58) **Field of Classification Search**
CPC H04L 12/66; H04L 29/06027; H04N 5/44543; H04N 7/17318; H04N 5/4403; G08C 17/02
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,567,557 A 1/1986 Burns
5,086,385 A 2/1992 Launey et al.
(Continued)

OTHER PUBLICATIONS

"Broadband Turns Inside Out, 2Wire.com: iNID, <www.2wire.com,> 2Wire, Inc., 1999-2006", "Broadband Turns Inside Out," 2Wire.com: iNID, <www.2wire.com,> 2Wire, Inc., 1999-2006, 3 pages.

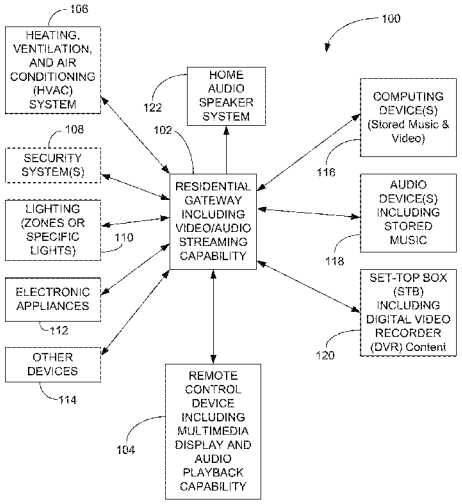
(Continued)

Primary Examiner — An T Nguyen
(74) *Attorney, Agent, or Firm* — Toler Law Group, PC

(57) **ABSTRACT**

A device includes a first interface, and a processor. The first interface connects to a wide area network and communicates with a first electronic device via the wide area network. The processor is configured to initiate transmission of a request while the processor is disconnected from a local area network. The processor is configured to initiate transmission of a second request to a second electronic device via the first interface. The second electronic device is located in a facility remote to the residential gateway. The processor is further configured to receive media content sent from the second electronic device responsive to the second request.

20 Claims, 11 Drawing Sheets



Related U.S. Application Data

continuation of application No. 11/600,599, filed on Nov. 16, 2006, now Pat. No. 8,230,466.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,237,305	A	8/1993	Ishikuro et al.	
5,999,525	A	12/1999	Krishnaswamy et al.	
6,029,092	A	2/2000	Stein	
6,133,847	A *	10/2000	Yang	G05B 19/0426 340/12.25
6,192,282	B1	2/2001	Smith et al.	
6,198,079	B1	3/2001	Essig	
6,208,384	B1 *	3/2001	Schultheiss	H04N 5/38 348/552
6,211,870	B1	4/2001	Foster	
6,229,433	B1	5/2001	Rye et al.	
6,259,706	B1	7/2001	Shimada	
6,380,866	B1	4/2002	Sizer, II et al.	
6,507,762	B1	1/2003	Amro et al.	
6,563,430	B1 *	5/2003	Kemink	H04B 1/202 340/12.22
6,731,201	B1	5/2004	Bailey et al.	
6,778,868	B2	8/2004	Imamura et al.	
6,791,467	B1	9/2004	Ben-Ze'ev	
6,838,978	B2	1/2005	Aizu et al.	
6,919,790	B2	7/2005	Kanazawa	
6,967,565	B2	11/2005	Lingemann	
7,006,006	B2 *	2/2006	Witkow	G08C 17/00 340/12.3
7,012,653	B1 *	3/2006	Strickland	H04N 7/163 348/553
7,064,675	B2 *	6/2006	Zigmond	G08C 17/02 340/12.51
7,079,951	B2	7/2006	Conner et al.	
7,110,836	B2	9/2006	Sturm et al.	
7,113,837	B2	9/2006	Takemoto et al.	
7,114,554	B2	10/2006	Bergman et al.	
7,116,264	B2	10/2006	Griesau et al.	
7,120,462	B2	10/2006	Kumar	
7,123,242	B1	10/2006	Henty	
7,124,356	B1	10/2006	Alsafadi et al.	
7,136,709	B2	11/2006	Arling et al.	
7,143,214	B2	11/2006	Hayes et al.	
7,218,243	B2 *	5/2007	Hayes	G08C 17/02 340/12.25
7,904,074	B2 *	3/2011	Karaoguz	H04L 12/2803 455/418
8,230,466	B2 *	7/2012	Cockrell	H04L 12/66 725/81
8,421,602	B2 *	4/2013	Madonna	G01S 5/02 340/12.22
8,552,843	B2 *	10/2013	Dizechi	G08C 23/04 340/12.22
8,601,526	B2 *	12/2013	Nishimura	H04N 5/44543 725/133
2001/0039460	A1	11/2001	Aisa	
2001/0041982	A1	11/2001	Kawasaki et al.	
2002/0002627	A1	1/2002	Stead et al.	
2002/0111698	A1	8/2002	Graziano et al.	
2002/0171379	A1	11/2002	Adamson	
2003/0003876	A1	1/2003	Rumsey	
2003/0005446	A1	1/2003	Jaff et al.	
2003/0011467	A1	1/2003	Suomela	
2003/0034898	A1 *	2/2003	Shamoon	G08C 17/02 340/12.22
2003/0036807	A1	2/2003	Fosler	
2003/0050737	A1	3/2003	Osann	
2003/0080874	A1 *	5/2003	Yumoto	G08C 17/02 340/13.23
2003/0083758	A1	5/2003	Williamson	
2003/0198938	A1	10/2003	Murray et al.	
2004/0003073	A1	1/2004	Krzyzanowski et al.	
2004/0072584	A1	4/2004	Kern	
2004/0073944	A1	4/2004	Booth	
2004/0107447	A1 *	6/2004	Katagishi	H04N 5/76 725/135
2004/0111490	A1	6/2004	Im et al.	
2004/0160319	A1	8/2004	Joao	
2004/0203387	A1 *	10/2004	Grannan	G08C 17/00 455/41.2
2004/0253945	A1	12/2004	Janik	
2004/0260407	A1 *	12/2004	Wimsatt	G05B 15/02 700/19
2005/0031097	A1	2/2005	Rabenko et al.	
2005/0085193	A1	4/2005	Stromberg et al.	
2005/0088333	A1	4/2005	Allport	
2005/0094610	A1 *	5/2005	de Clerq	G05B 15/02 370/338
2005/0184915	A1	8/2005	Nagel et al.	
2005/0225426	A1	10/2005	Yoon et al.	
2005/0239445	A1 *	10/2005	Karaoguz	H04L 12/2803 455/414.1
2005/0248444	A1	11/2005	Joao	
2006/0031550	A1 *	2/2006	Janik	G06F 1/1632 709/231
2006/0041915	A1 *	2/2006	Dimitrova	H04L 12/2803 725/81
2006/0053447	A1	3/2006	Krzyzanowski et al.	
2006/0064526	A1	3/2006	Smith et al.	
2006/0149850	A1	7/2006	Bowman	
2006/0168618	A1 *	7/2006	Choi	G08C 17/02 725/37
2006/0174102	A1	8/2006	Smith et al.	
2006/0176188	A1	8/2006	Cho et al.	
2006/0178042	A1	8/2006	Hinkson et al.	
2006/0178777	A1	8/2006	Park et al.	
2006/0179126	A1	8/2006	Fujino et al.	
2006/0184972	A1	8/2006	Rafey et al.	
2007/0107020	A1	5/2007	Tavares	
2007/0136768	A1	6/2007	Kumar	
2007/0154093	A1	7/2007	Dunton	
2007/0165583	A1	7/2007	Pecan	
2007/0279247	A1 *	12/2007	Rye	G08C 17/02 340/13.25
2008/0079604	A1 *	4/2008	Madonna	G01S 5/02 340/13.24
2008/0117922	A1 *	5/2008	Cockrell	H04L 12/66 370/401
2012/0326835	A1 *	12/2012	Cockrell	H04L 12/66 340/4.31

OTHER PUBLICATIONS

"Media Controller—Control Your Music—Control Your Home, <www.control4.com,> Control4, 2006", "Media Controller—Control Your Music—Control Your Home," <www.control4.com,> Control4, 2006, 2 pages.

"PlayStation Portable Handheld Entertainment System Value Pack, SonyStyle USA—PSP98500, <www.sonystyle.com,>", "PlayStation Portable Handheld Entertainment System Value Pack," SonyStyle USA—PSP98500,www.sonystyle.com, viewed Aug. 29, 2006, 4 pages.

"PlayStation—PlayStation Portable—The PSP, <www.us.playstation.com,> Sony Computer Entertainment America Inc. 2006", "PlayStation—PlayStation Portable—The PSP," <www.us.playstation.com,> Sony Computer Entertainment America Inc., 2006, 4 pages.

"System Remote Control—Ultimate Control in the Palm of Your Hand, <www.control4.com,> Control4, 2006", "System Remote Control—Ultimate Control in the Palm of Your Hand," <www.control4.com,> Control4, 2006, 2 pages.

"Control 4—Home Theater Solutions, <www.control4.com,> 2006", Control 4—Home Theater Solutions, <www.control4.com, Control 4, 2006, 2 pages.

Chen, et al., ""iMobile EE—An Enterprise Mobile Service Platform," Kluwer Academic Publishers, The Netherlands, 2003", pp. 283 through 297.

* cited by examiner

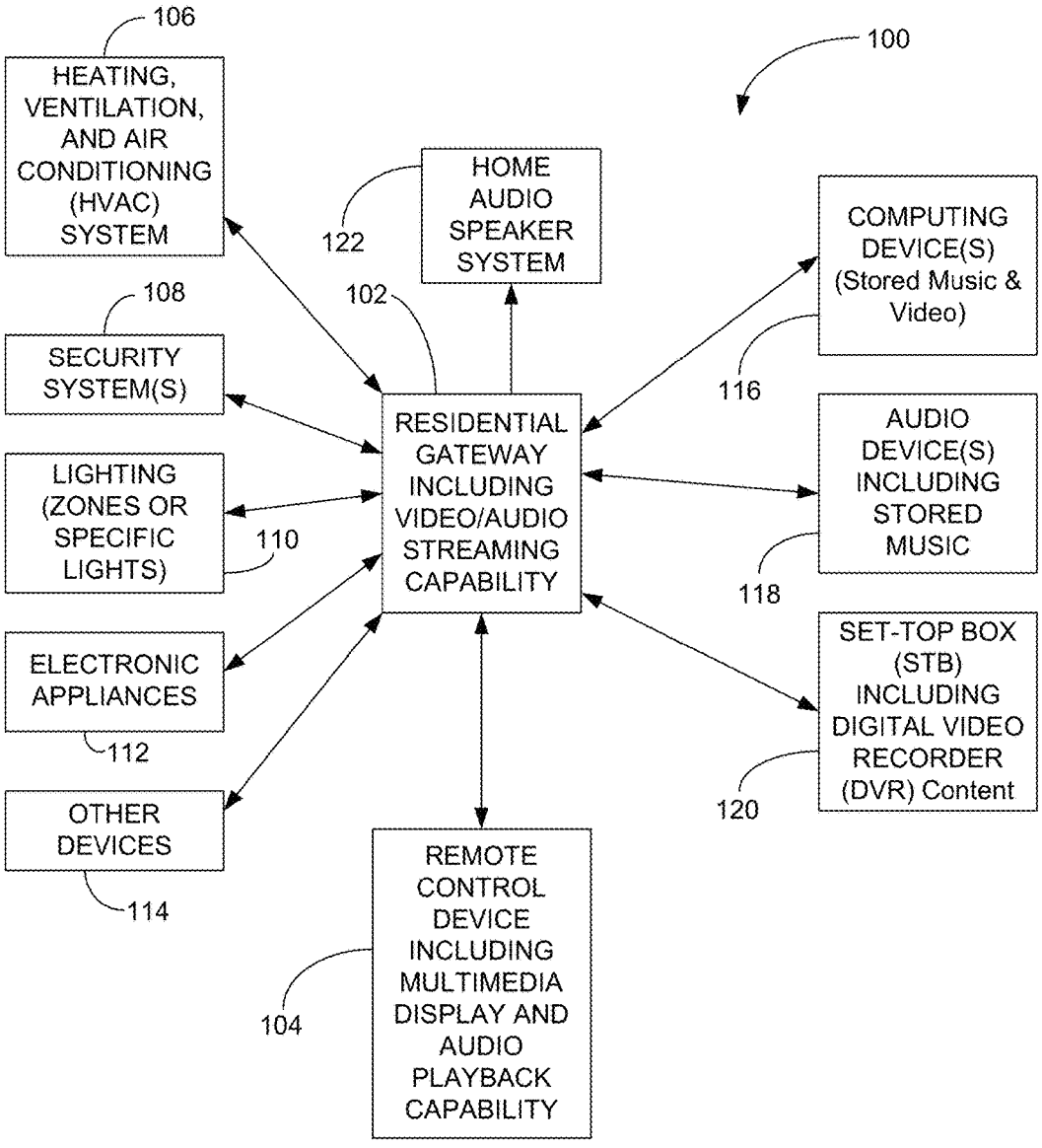

106
HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) SYSTEM
100
122
HOME AUDIO SPEAKER SYSTEM
COMPUTING DEVICE(S) (Stored Music & Video)
108
SECURITY SYSTEM(S)
102
116
RESIDENTIAL GATEWAY INCLUDING VIDEO/AUDIO STREAMING CAPABILITY
AUDIO DEVICE(S) INCLUDING STORED MUSIC
LIGHTING (ZONES OR SPECIFIC LIGHTS)
110
118
SET-TOP BOX (STB) INCLUDING DIGITAL VIDEO RECORDER (DVR) Content
ELECTRONIC APPLIANCES
112
120
OTHER DEVICES
114
REMOTE CONTROL DEVICE INCLUDING MULTIMEDIA DISPLAY AND AUDIO PLAYBACK CAPABILITY
104

FIG. 1

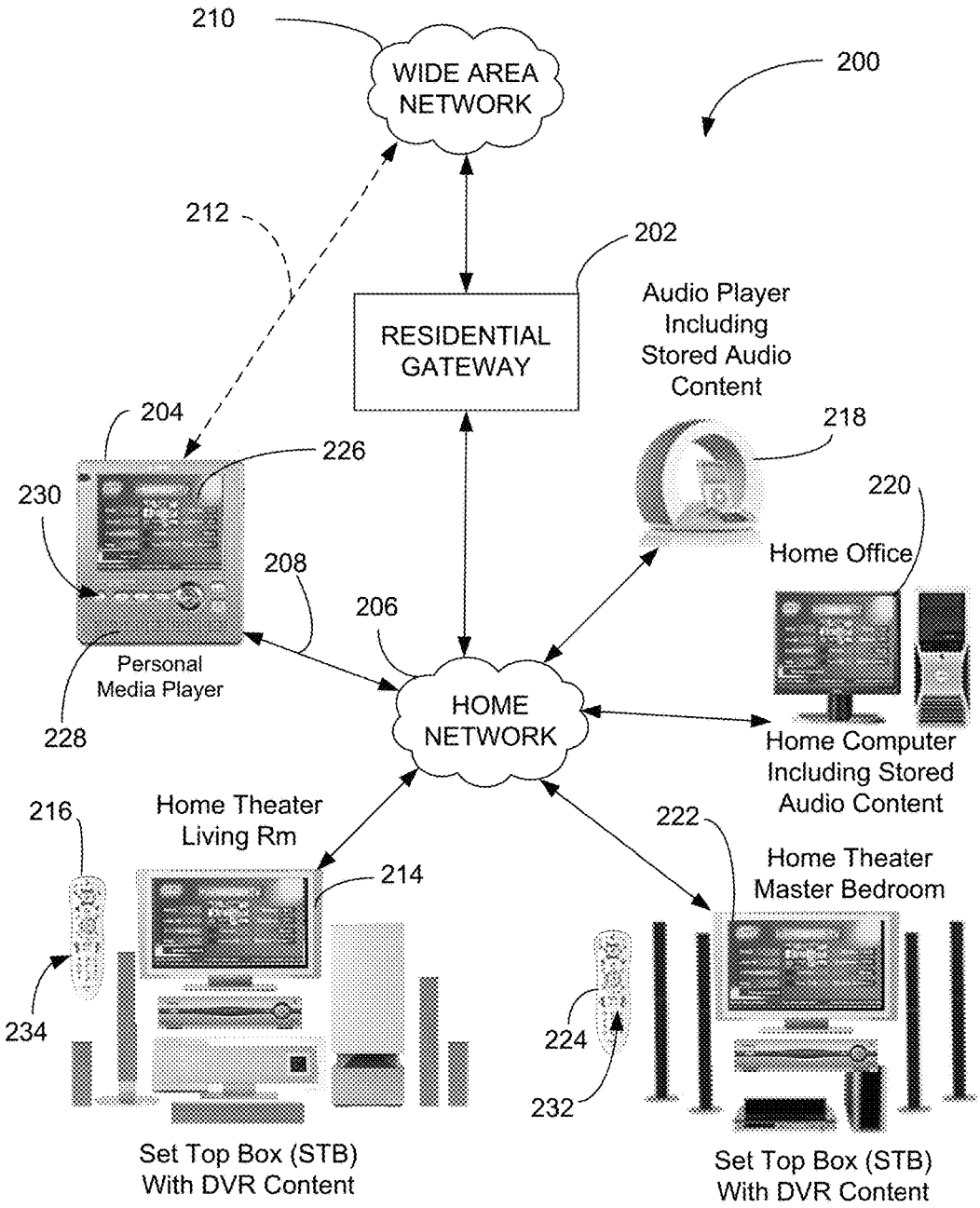

210
WIDE AREA NETWORK
200
212
202
RESIDENTIAL GATEWAY
Audio Player Including Stored Audio Content
204
226
218
230
220
Home Office
208
206
Personal Media Player
HOME NETWORK
228
Home Computer Including Stored Audio Content
216
Home Theater Living Rm
222
214
Home Theater Master Bedroom
234
224
232
Set Top Box (STB) With DVR Content
Set Top Box (STB) With DVR Content

FIG. 2

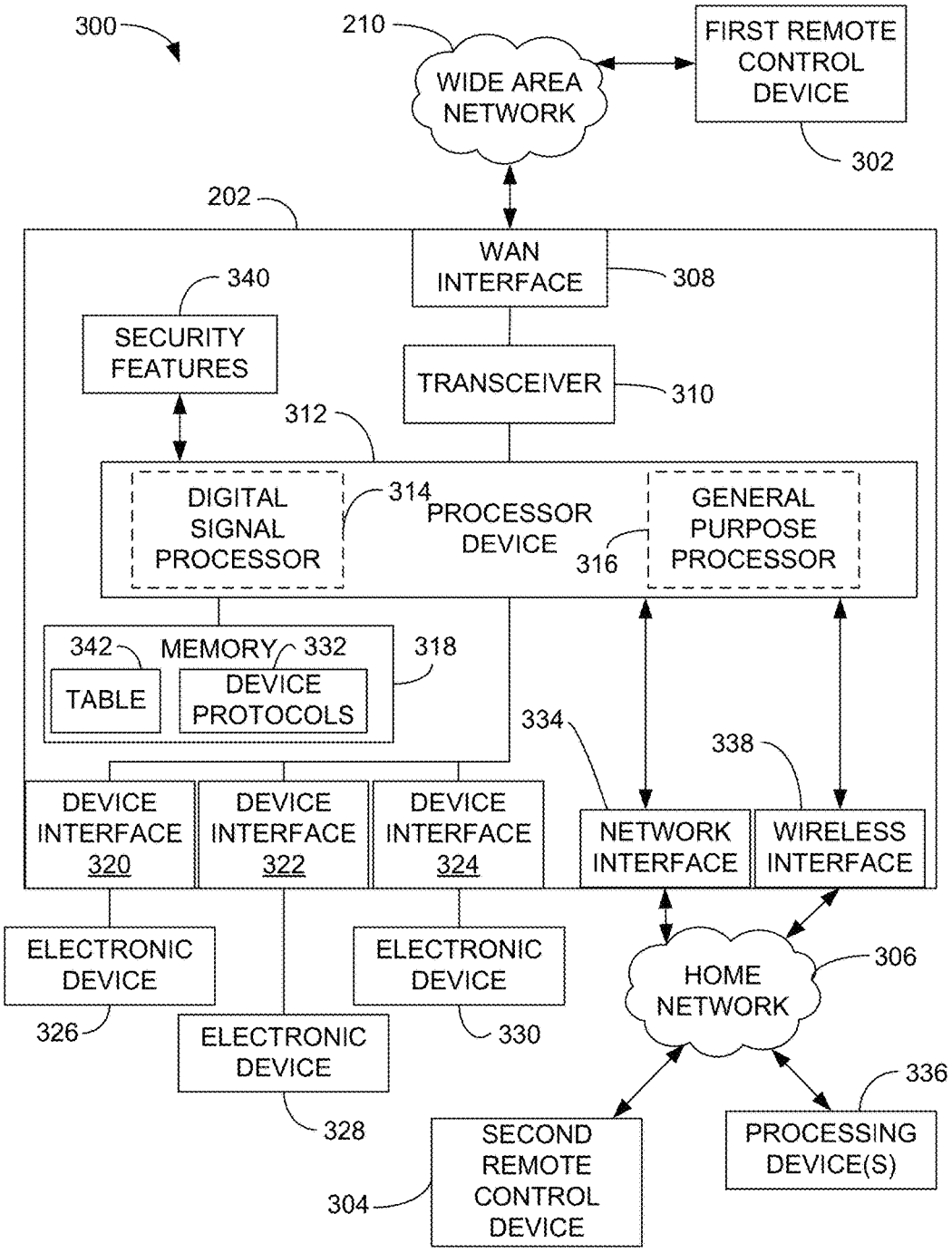

300
210
WIDE AREA NETWORK
FIRST REMOTE CONTROL DEVICE
302
202
WAN INTERFACE
308
340
SECURITY FEATURES
TRANSCEIVER
310
312
DIGITAL SIGNAL PROCESSOR
314
PROCESSOR DEVICE
316
GENERAL PURPOSE PROCESSOR
342
MEMORY
332
318
TABLE
DEVICE PROTOCOLS
334
338
DEVICE INTERFACE 320
DEVICE INTERFACE 322
DEVICE INTERFACE 324
NETWORK INTERFACE
WIRELESS INTERFACE
ELECTRONIC DEVICE
326
ELECTRONIC DEVICE
330
ELECTRONIC DEVICE
328
HOME NETWORK
306
336
SECOND REMOTE CONTROL DEVICE
304
PROCESSING DEVICE(S)

FIG. 3

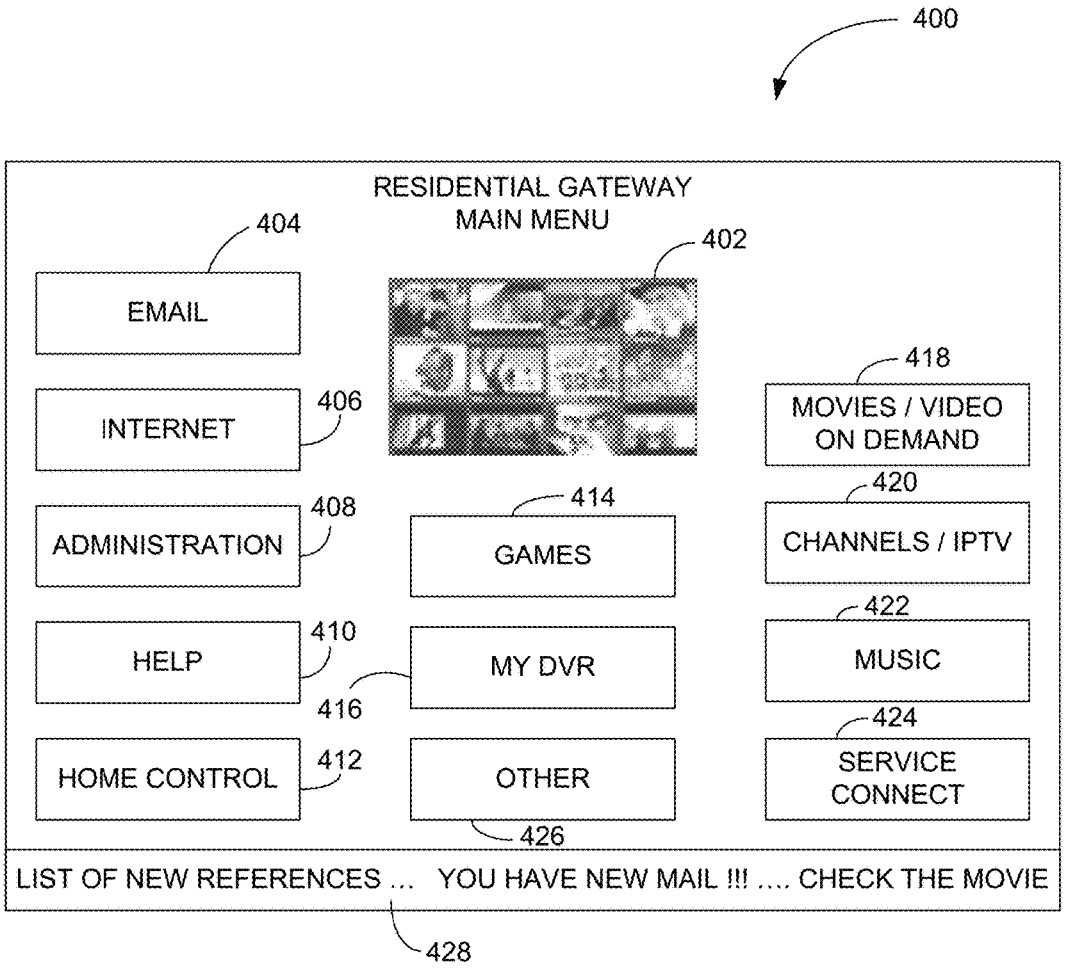

400
RESIDENTIAL GATEWAY
MAIN MENU
404
EMAIL
402
406
INTERNET
418
MOVIES / VIDEO
ON DEMAND
408
ADMINISTRATION
414
GAMES
420
CHANNELS / IPTV
410
HELP
MY DVR
422
MUSIC
416
412
HOME CONTROL
OTHER
424
SERVICE
CONNECT
426
LIST OF NEW REFERENCES ... YOU HAVE NEW MAIL !!! .... CHECK THE MOVIE
428

FIG. 4

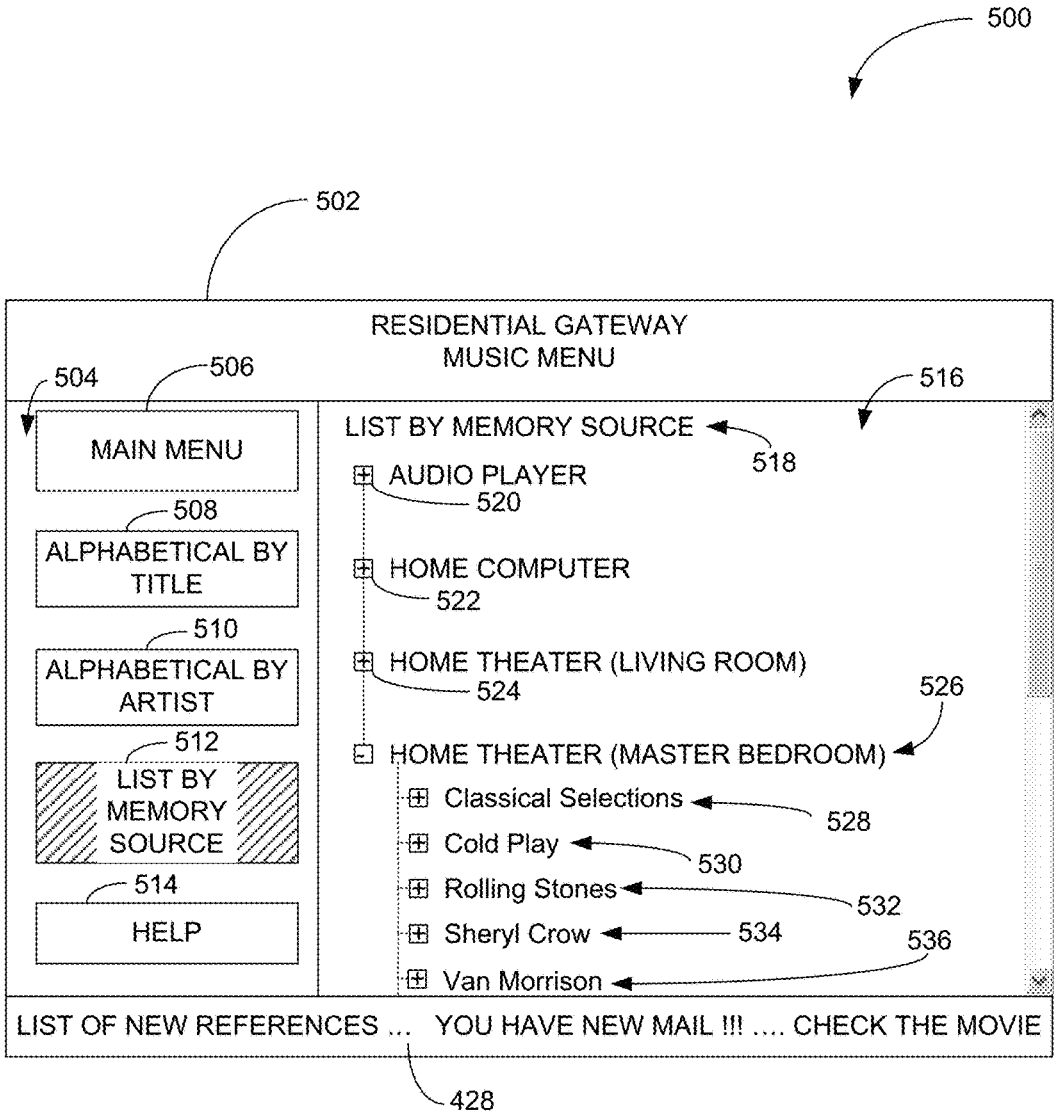

500
502
RESIDENTIAL GATEWAY
MUSIC MENU
504
506
516
MAIN MENU
LIST BY MEMORY SOURCE
518
AUDIO PLAYER
520
508
ALPHABETICAL BY TITLE
HOME COMPUTER
522
510
ALPHABETICAL BY ARTIST
HOME THEATER (LIVING ROOM)
524
526
512
LIST BY MEMORY SOURCE
HOME THEATER (MASTER BEDROOM)
Classical Selections
528
Cold Play
530
514
HELP
Rolling Stones
532
Sheryl Crow
534
536
Van Morrison
LIST OF NEW REFERENCES ... YOU HAVE NEW MAIL !!! .... CHECK THE MOVIE
428

FIG. 5

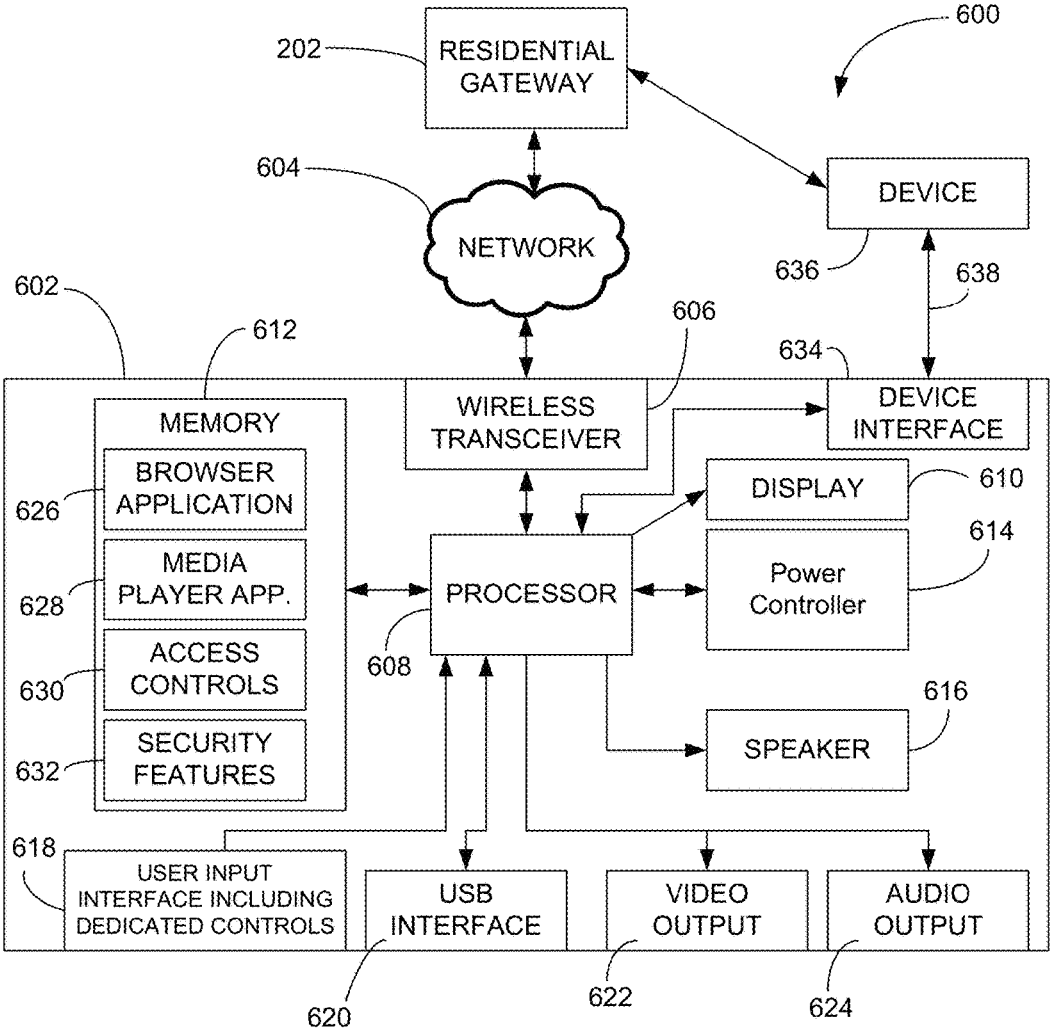

202
RESIDENTIAL GATEWAY
600
604
NETWORK
DEVICE
636
638
602
612
606
634
MEMORY
WIRELESS TRANSCEIVER
DEVICE INTERFACE
BROWSER APPLICATION
626
DISPLAY
610
MEDIA PLAYER APP.
628
PROCESSOR
Power Controller
614
608
ACCESS CONTROLS
630
SECURITY FEATURES
632
SPEAKER
616
618
USER INPUT INTERFACE INCLUDING DEDICATED CONTROLS
USB INTERFACE
VIDEO OUTPUT
AUDIO OUTPUT
620
622
624

FIG. 6

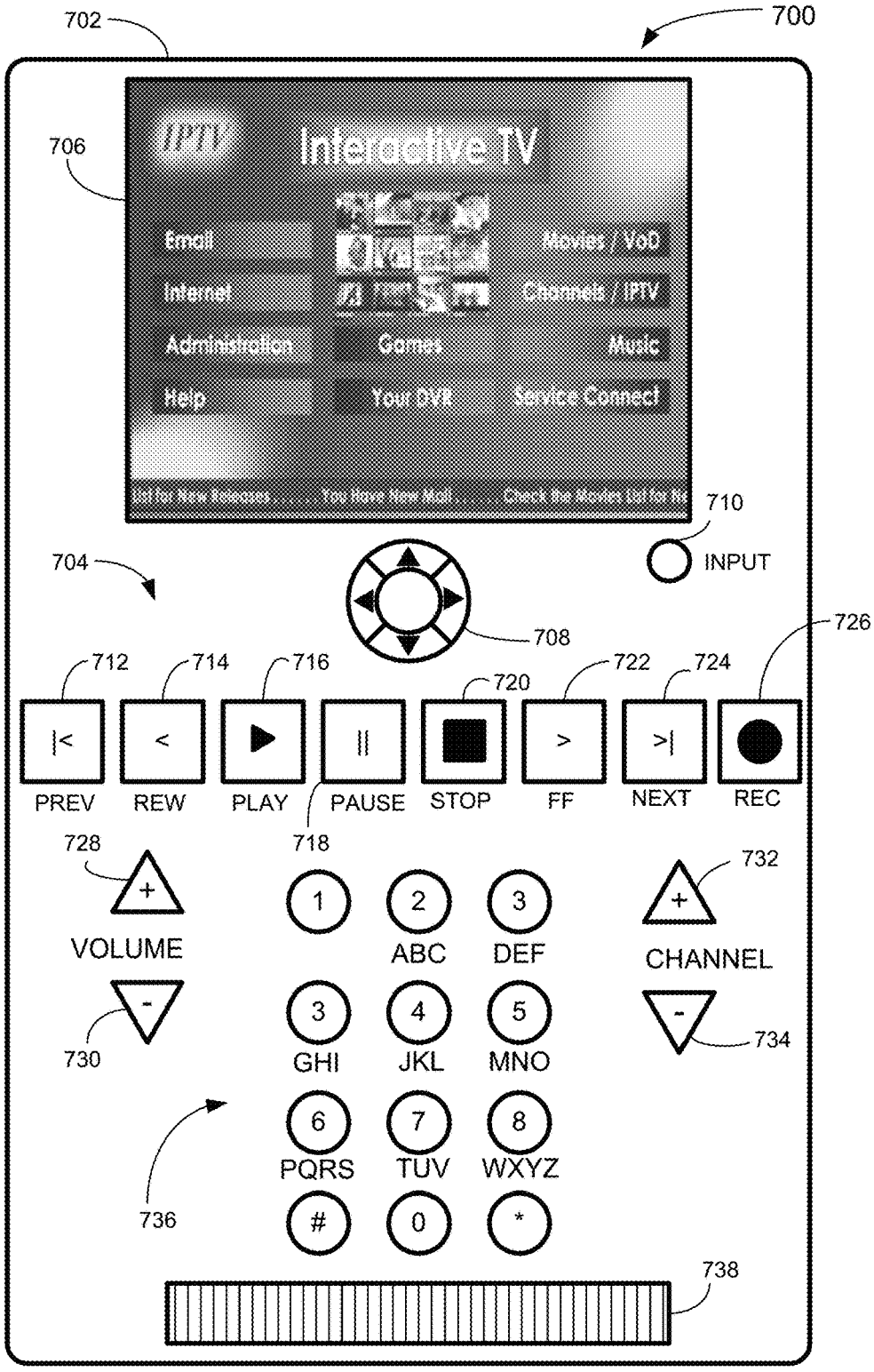

702
700
706
IPTV
Interactive TV
Email
Internet
Administration
Help
Movies / VoD
Channels / IPTV
Music
Service Connect!
710
INPUT
704
708
726
712
714
716
720
722
724
|<
<
>
||
>|
PREV
REW
PLAY
PAUSE
STOP
FF
NEXT
REC
718
728
732
VOLUME
CHANNEL
1
2
3
ABC
DEF
3
4
5
GHI
JKL
MNO
730
734
6
7
8
PQRS
TUV
WXYZ
#
0
*
736
738

FIG. 7

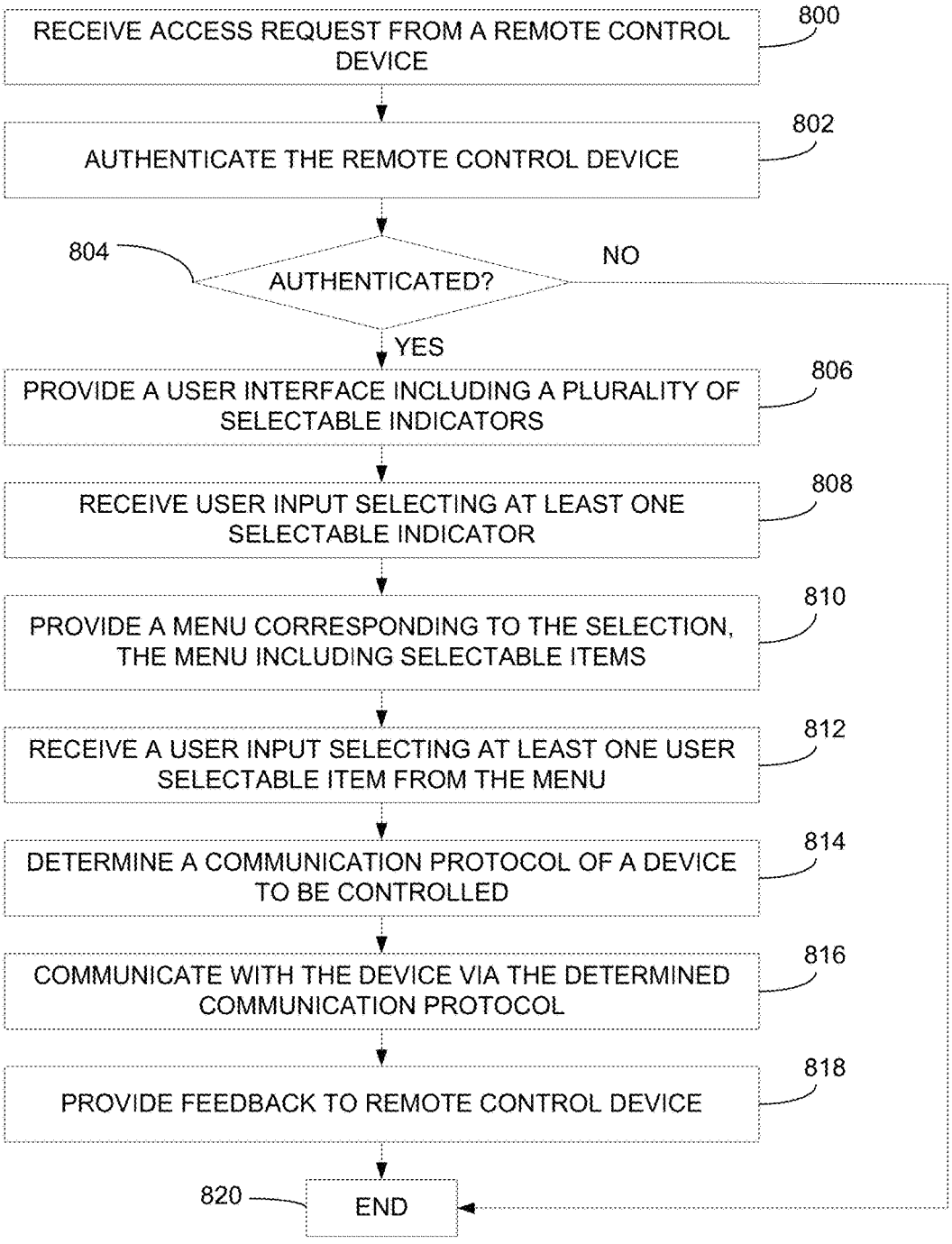

RECEIVE ACCESS REQUEST FROM A REMOTE CONTROL DEVICE
800
AUTHENTICATE THE REMOTE CONTROL DEVICE
802
804
AUTHENTICATED?
NO
YES
PROVIDE A USER INTERFACE INCLUDING A PLURALITY OF SELECTABLE INDICATORS
806
RECEIVE USER INPUT SELECTING AT LEAST ONE SELECTABLE INDICATOR
808
PROVIDE A MENU CORRESPONDING TO THE SELECTION, THE MENU INCLUDING SELECTABLE ITEMS
810
RECEIVE A USER INPUT SELECTING AT LEAST ONE USER SELECTABLE ITEM FROM THE MENU
812
DETERMINE A COMMUNICATION PROTOCOL OF A DEVICE TO BE CONTROLLED
814
COMMUNICATE WITH THE DEVICE VIA THE DETERMINED COMMUNICATION PROTOCOL
816
PROVIDE FEEDBACK TO REMOTE CONTROL DEVICE
818
820
END

FIG. 8

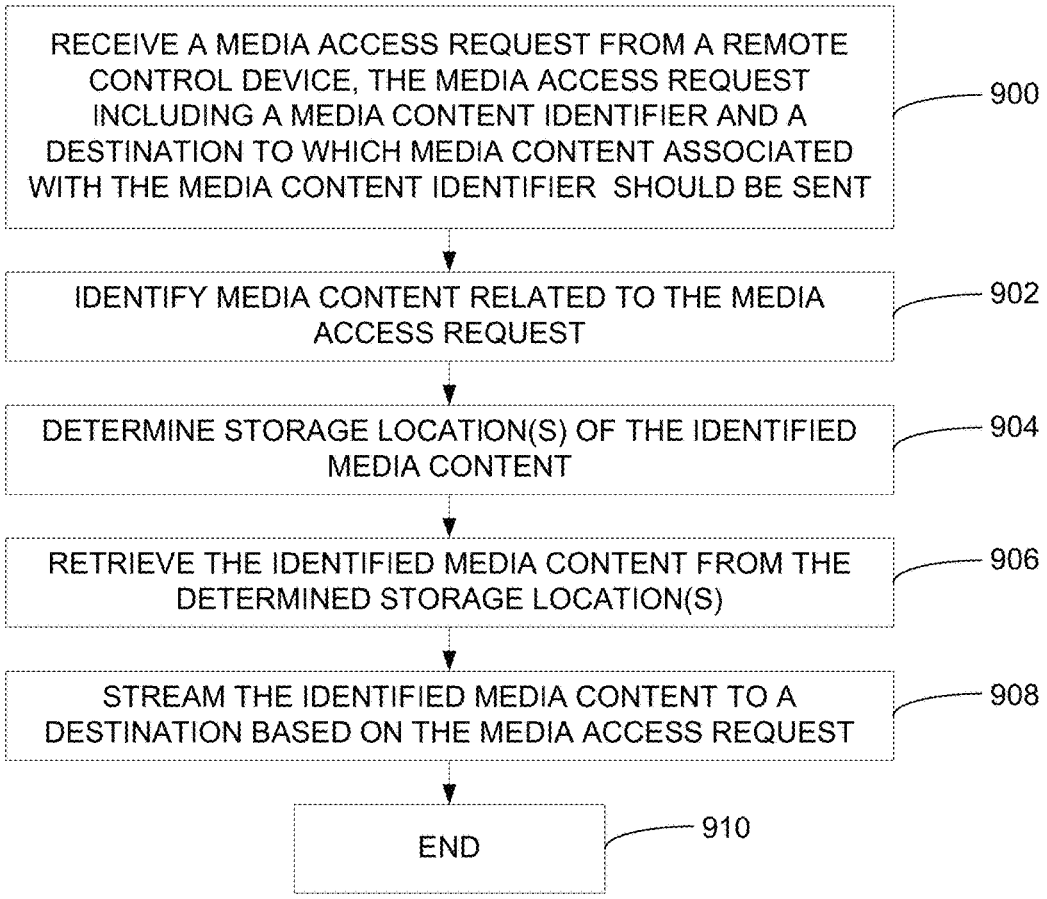

RECEIVE A MEDIA ACCESS REQUEST FROM A REMOTE CONTROL DEVICE, THE MEDIA ACCESS REQUEST INCLUDING A MEDIA CONTENT IDENTIFIER AND A DESTINATION TO WHICH MEDIA CONTENT ASSOCIATED WITH THE MEDIA CONTENT IDENTIFIER SHOULD BE SENT
900
IDENTIFY MEDIA CONTENT RELATED TO THE MEDIA ACCESS REQUEST
902
DETERMINE STORAGE LOCATION(S) OF THE IDENTIFIED MEDIA CONTENT
904
RETRIEVE THE IDENTIFIED MEDIA CONTENT FROM THE DETERMINED STORAGE LOCATION(S)
906
STREAM THE IDENTIFIED MEDIA CONTENT TO A DESTINATION BASED ON THE MEDIA ACCESS REQUEST
908
END
910

FIG. 9

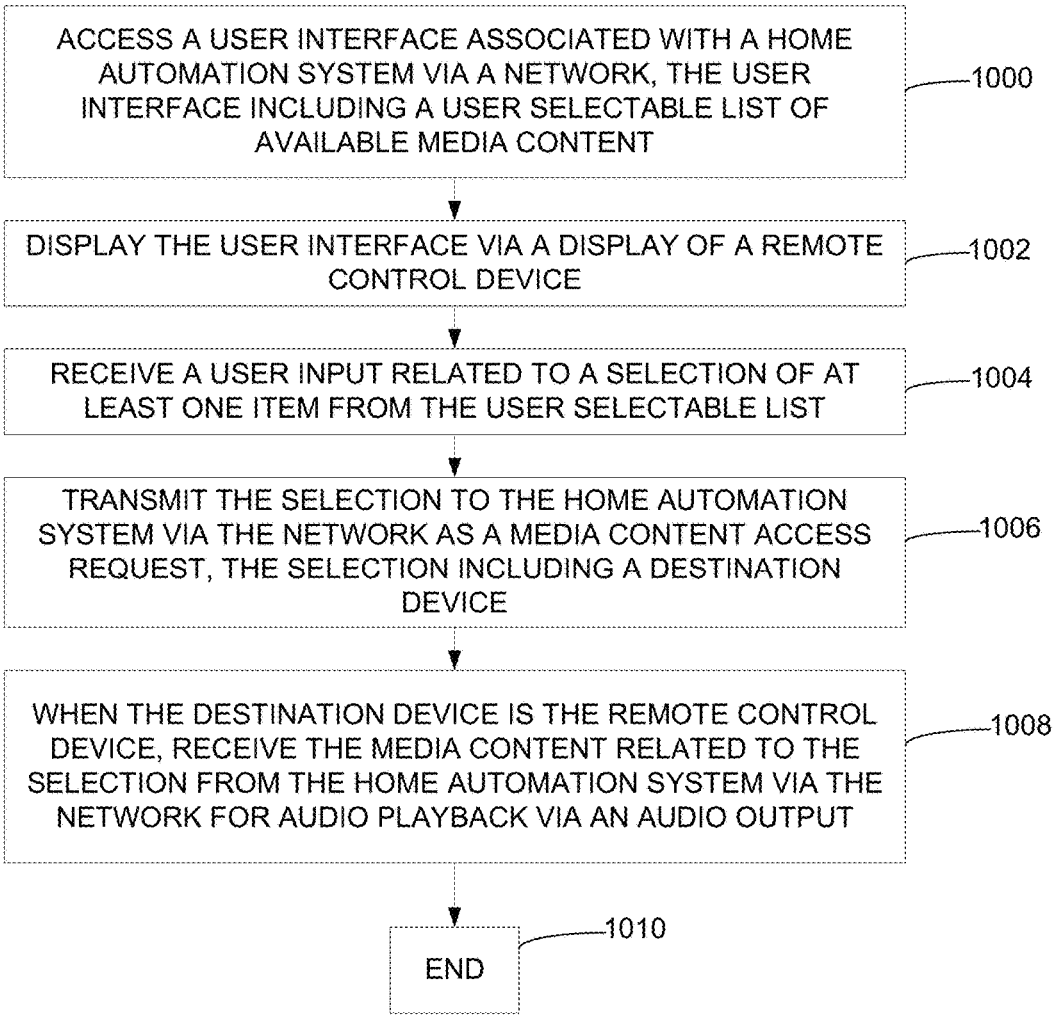

ACCESS A USER INTERFACE ASSOCIATED WITH A HOME AUTOMATION SYSTEM VIA A NETWORK, THE USER INTERFACE INCLUDING A USER SELECTABLE LIST OF AVAILABLE MEDIA CONTENT
1000
DISPLAY THE USER INTERFACE VIA A DISPLAY OF A REMOTE CONTROL DEVICE
1002
RECEIVE A USER INPUT RELATED TO A SELECTION OF AT LEAST ONE ITEM FROM THE USER SELECTABLE LIST
1004
TRANSMIT THE SELECTION TO THE HOME AUTOMATION SYSTEM VIA THE NETWORK AS A MEDIA CONTENT ACCESS REQUEST, THE SELECTION INCLUDING A DESTINATION DEVICE
1006
WHEN THE DESTINATION DEVICE IS THE REMOTE CONTROL DEVICE, RECEIVE THE MEDIA CONTENT RELATED TO THE SELECTION FROM THE HOME AUTOMATION SYSTEM VIA THE NETWORK FOR AUDIO PLAYBACK VIA AN AUDIO OUTPUT
1008
END
1010

FIG. 10

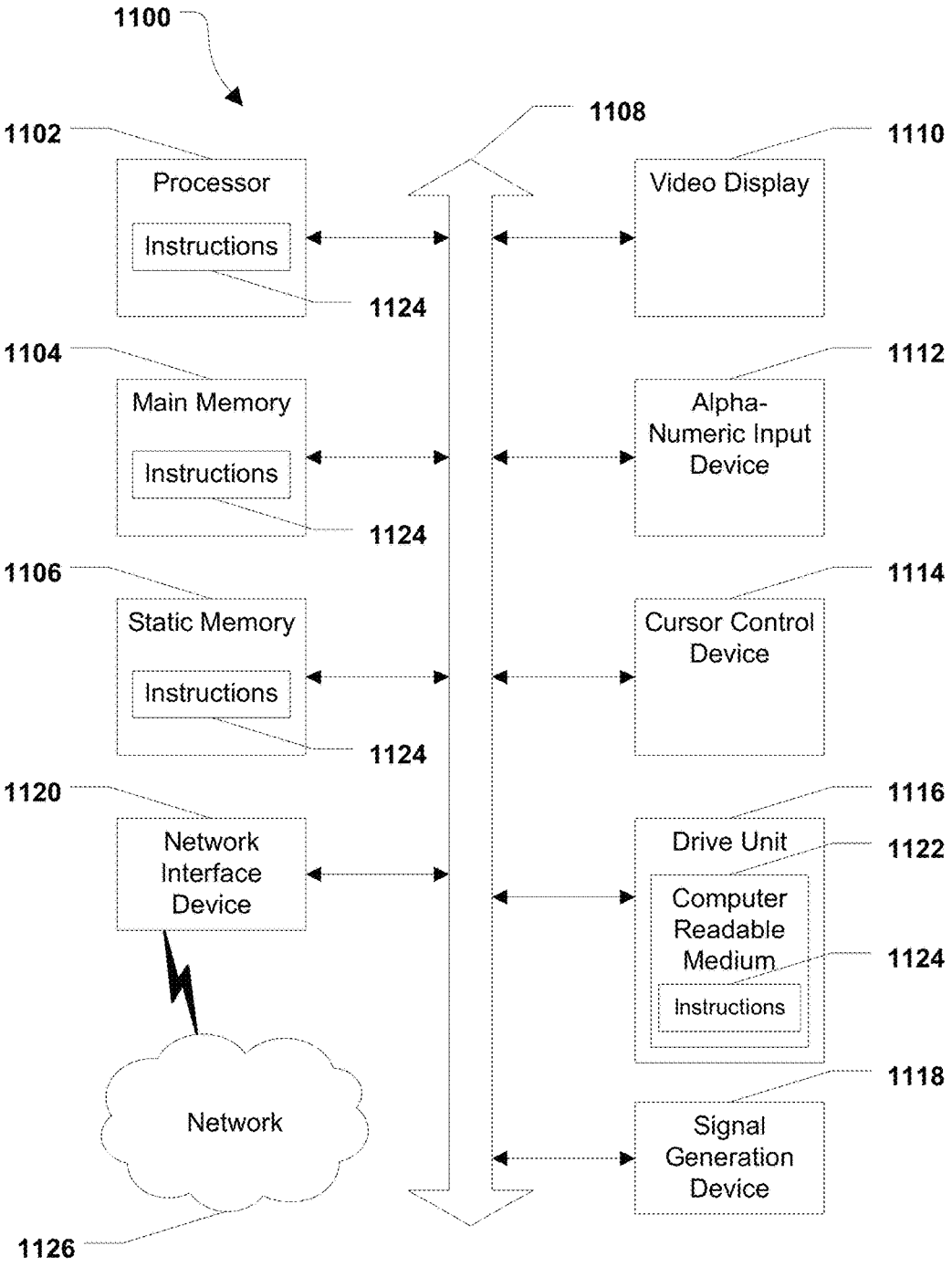

1100
1102
Processor
Instructions
1124
1104
Main Memory
Instructions
1124
1106
Static Memory
Instructions
1124
1120
Network Interface Device
Network
1126
1108
1110
Video Display
1112
Alpha-Numeric Input Device
1114
Cursor Control Device
1116
Drive Unit
1122
Computer Readable Medium
1124
Instructions
1118
Signal Generation Device

FIG. 11

HOME AUTOMATION SYSTEM AND METHOD INCLUDING REMOTE MEDIA ACCESS

CLAIM OF PRIORITY

The present application is a continuation of, and claims priority from, U.S. patent application Ser. No. 13/532,095, filed on Jun. 25, 2012, which is a continuation of U.S. patent application Ser. No. 11/600,599, filed on Nov. 16, 2006, now U.S. Pat. No. 8,230,466, each of which is expressly incorporated herein by reference in its entirety.

FIELD OF THE DISCLOSURE

The present disclosure is generally related to home automation systems and methods including remote media access.

BACKGROUND

In general, current home theater systems may have a media device to store available media content, including audio data and video data. Typically, a representative media device serves as a central store of media content and does not provide access to other possible media storage devices within the home.

Additionally, conventional remote control devices (that are more than just a universal remote control) to control the representative media device may be expensive. While a representative remote control device may be able to control the media device to deliver media content within a residence, the representative remote control device may not provide remote access to the media content. Additionally, the representative remote control device may utilize proprietary communication channels and/or may have limited functionality.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a block diagram of a particular illustrative embodiment of a home automation system;

FIG. **2** is a block diagram of a second particular illustrative embodiment of a home automation system;

FIG. **3** is a block diagram of a particular illustrative embodiment of a residential gateway, such as the residential gateways shown in FIGS. **1** and **2**;

FIG. **4** is a block diagram of a particular illustrative embodiment of a graphical user interface of a home automation system;

FIG. **5** is a block diagram of a particular illustrative embodiment of a graphical user interface to access stored media content;

FIG. **6** is a block diagram of a particular illustrative embodiment of a personal media player device, such as the personal media player of FIGS. **1** and **2**;

FIG. **7** is a general diagram of a particular illustrative embodiment of a personal media player device;

FIG. **8** is a flow diagram of a particular illustrative embodiment of a method of processing an access request received from a personal media player;

FIG. **9** is a flow diagram of a particular illustrative embodiment of a method of processing a media content request received from a personal media player;

FIG. **10** is a flow diagram of a particular illustrative embodiment of a method of accessing media content; and

FIG. **11** is a block diagram of a particular embodiment of a general computer system.

DETAILED DESCRIPTION

In a particular illustrative embodiment, a portable personal media player includes a first interface, a second interface, a display, an audio output, a keypad and a processor. The first interface communicates via a network with a residential gateway that is communicatively coupled to a plurality of electronic devices. The second interface may communicate wireless commands directly to at least one of the plurality of electronic devices. The display is adapted to display alphanumeric data and video content. The processor is coupled to the first interface, the second interface, the display, the audio output, and the keypad. The processor is responsive to a selection received via the keypad to transmit a request for selected media content to the residential gateway. The processor receives media content related to the request, processes the media content and provides video data to the display and audio data to the audio output. The keypad may include a plurality of dedicated controls, where at least one key is associated with a control function of one of the plurality of electronic devices.

In another particular embodiment, a method is disclosed that includes receiving a command from a remote control device having dedicated control keys at a home automation system. The home automation system may be coupled to an electronic device and to a processing device having a memory. When the command includes a selection of media content, the method further includes determining one or more memory locations of the media content based on the selection, retrieving the identified media content from the one or more memory locations, and streaming the identified media content to a destination device based on the command. When the command includes a control instruction associated with one of the dedicated control keys, the method further includes identifying a device associated with the control instruction, determining a communication protocol associated with the identified device, and transmitting the command to the identified device based on the communication protocol.

In another particular embodiment, a method of accessing a home automation system is disclosed. The method includes accessing, using a remote control device having a plurality of dedicated controls, a user interface associated with a home automation system via a network without disrupting a display of an electrical device. The user interface includes a list of selectable media content. The method further includes receiving a selection related to at least one item from the list and transmitting the selection to the home automation system via the network to retrieve media content stored at one or more electrical devices. Additionally, the method includes receiving media content related to the selection from the home automation system and generating an audio signal related to the received media content via an audio output of the remote control device.

In another particular embodiment, a processor-readable medium including processor-readable instructions executable by a processor is disclosed that is adapted to receive and perform a command responsive to a remote control device at a home automation system that is communicatively coupled to an electrical device and to a processing device having a memory. The processor-readable medium includes instructions to receive a command from a remote control device having dedicated control keys. When the command includes a control instruction associated with one of the dedicated

control keys, the processor-readable medium includes instructions to identify a device associated with the control instruction, to determine a communication protocol associated with the identified device, and to transmit the command to the identified device based on the communication protocol.

FIG. **1** is a block diagram of a particular illustrative embodiment of a home automation system **100** that includes a residential gateway **102** and a remote control device **104**, which may be a universal remote control device. The home automation system **100** allows a user to control various electronic devices and home theater components via the residential gateway **102**. In a particular illustrative embodiment, the residential gateway **102** includes video and audio streaming capability. The remote control device **104** may include multimedia display and audio playback capability.

The residential gateway **102** may be communicatively coupled to a plurality of electronic devices and systems, including a heating, ventilation and air conditioning (HVAC) system **106**, a security system **108** (or specific components of an alarm system, such as video cameras, control pads, other components, or any combination thereof), lighting **110** (such as zone lighting, lighting controls for specific lights, or any combination thereof), electronic appliances **112** (such as a coffee maker, stove, bread maker, other electronic appliances **114**, or any combination thereof), and a home audio speaker system **122**. The residential gateway **102** may also be communicatively coupled to a plurality of processing devices, including one or more computing devices **116**, one or more audio devices **118**, and one or more set-top box (STB) devices **120**. The one or more computing devices **116** may include memory having stored audio and video data. The one or more audio devices **118** may include memory having stored music, which may be stored in a compressed, digitized format, such as Moving Picture Experts Group (MPEG), or other compressed audio/video formats. The one or more STB devices **120** may include memory to store digital video recorder (DVR) content.

In a particular illustrative embodiment, the remote control device **104** may communicate an access request to the residential gateway **102** via wireless communication, such as via a wireless network, an infrared communications link, another wireless communications link, or any combination thereof. In another particular illustrative embodiment, the remote control device **104** may communicate with the residential gateway **102** via a wired network connection. A user may utilize the remote control device **104** to control one or more of the electronic devices and systems, such as the HVAC system **106**, the security system **108**, the lighting devices **110**, the electronic appliances **112**, and the other devices **114**. Additionally, a user may utilize the remote control device **104** to access stored media content at one or more of the processing devices, such as the one or more computing devices **116**, the one or more audio devices **118**, and the one or more set-top box devices **120**. In a particular illustrative embodiment, the remote control device **104** may be provided with multiple dedicated control keys, such as a volume control key (such as an increase volume button, a decrease volume button, a mute button, or any combination thereof), a channel selection key (such as an increase channel button, a decrease channel button, or any combination thereof), a play button, a pause button, a fast forward button, a rewind button, a next button, a previous button, a stop button, a record button, an input source selection button (such as a button to control a device to select between available input sources, such as an antenna input, a cable input, another input, or any combination thereof), other types of dedicated control keys or buttons, or any combination thereof. For example, the remote control device **104** may be provided with control keys similar to a universal remote control device to control televisions, video cassette recorders (VCRs), digital video disk (DVD) devices, home stereo equipment, other devices, or any combination thereof. In a particular embodiment, the play button and the pause button may be combined to form a play/pause button. Similarly, other dedicated buttons may be combined.

In a particular illustrative, non-limiting embodiment, the remote control device **104** may be adapted to display video content and to reproduce compressed audio data via an integrated speaker or other audio output, such as a headphone interface or jack. The residential gateway **102** may be adapted to receive a media content request from the remote control device **104**. The media content request may include an indication of a destination device, such as an Internet protocol address, a device name, a media access control (MAC) address or other type of device indication. The residential gateway **102** may identify particular media content based on the media content request, retrieve the identified media content from one or more of the processing devices **116**, **118**, and **120**, and stream the requested media content to a particular destination device associated with the destination device indicated by in the media content request. In a particular embodiment, the destination device may be the remote control device **104**. In another particular embodiment, the destination device may include a selected one of the one or more computing devices **116**, a selected one of the one or more audio devices **118**, a selected one of the one or more STB devices **120**, a home audio speaker system **122**, or another destination device. In another particular embodiment, the residential gateway **102** may stream selected media content to each of the processing devices.

In a particular illustrative embodiment, the residential gateway **102** may communicate with the one or more electronic devices and systems **106**, **108**, **110**, **112**, **114**, and **122** via a wired network, a wireless network, or any combination thereof. Additionally, each electronic device or system, such as the HVAC system **106**, the security system **108**, the lighting **110**, the electronic appliances **112**, the other devices **114**, and the home audio speaker system **122** may be accessible using a protocol that may be specific to each particular device. For example, the HVAC system **106** may be controlled using a protocol specific to the HVAC system. Alternatively, the HVAC system **106** may communicate using a standard device protocol, such as Internet Protocol. The residential gateway **102** may communicate with the one or more processing devices, such as the one or more computing devices **116**, the one or more audio devices **118**, and the one or more STB devices **120** via an Internet protocol network, another type of network, or a direct connection, such as a Universal Serial Bus (USB) connection.

In a particular illustrative embodiment, the remote control device **104** may interact with the residential gateway **102** via a web browser to access a web page that includes one or more selectable indicators. A user may select one such indicator to access stored media content (such as audio data, video data, or any combination thereof) stored at one or more of the computing devices, such as the one or more computing devices **116**, the one or more audio devices **118**, and the one or more STB devices **120**. The user may utilize the remote control device **104** to control the residential gateway **102** to retrieve selected media content and to stream the selected media content to a destination, such as the

remote control device **104**. Additionally, a user may select an indicator to control, for example, the HVAC system **106**. For example, a user may input a desired temperature via the user interface. The residential gateway **102** may determine a protocol associated with the HVAC system **106** and adjust a temperature setting of the HVAC system **106** according to the desired temperature input. In another particular embodiment, a user may select an alarm system indicator. The remote control device **104** may allow the user to view security camera footage (stored or live) of the security system **108** on a display of the remote control device **104**. Alternatively, the user may utilize the remote control device **104** to select a destination, such as a television, for display of the security camera footage.

In general, the home automation system **100** enables a user to access media content stored at home devices, such as video content, audio content, DVR content, and other media content, via a software-enabled personal media player, such as the remote control device **104**. In a particular embodiment, a user may utilize the remote control device **104** to access the home automation system **100** via a wide area network, such as the Internet, to remotely access all content (audio and video) within the user's home. Moreover, a user may utilize the remote control device **104** to access and control other electronic devices within the user's home.

In a particular illustrative embodiment, the remote control device **104** allows a user to access and control in-home media devices, such as the one or more computing devices **116**, the one or more audio devices **118**, and the one or more STB devices **120**. The remote control device **104** may operate as a universal remote control device to control such devices locally and as a portable audio/video playback device, so that a user may enjoy selected media content outside the presence of devices playing the media content. Selected audio and video data may be retrieved and reproduced by the remote control device **104**, which may be carried by the user, allowing the user to move freely without having to activate televisions and/or stereos in the user's presence (such as in a separate room of the user's home). In a particular illustrative embodiment, a user may sit on his or her patio and watch a digitally recorded television program on a display of the remote control device **104**, where the digitally recorded television program is retrieved from stored media content of a DVR in a room inside the home.

FIG. **2** is a block diagram of a second particular illustrative embodiment of a home automation system **200** including a residential gateway **202** and a personal media player **204**. The home automation system **200** may also include a connection to a wide area network **210**, such as the Internet. Additionally, the home automation system **200** may include a first home theater system **214** having a remote control **216**, an audio player **218**, and a home computer system **220**. Further, the home automation system **200** may include a second home theater system **222** having a remote control **224**, which may be coupled a home network **206**. In a particular illustrative, non-limiting embodiment, the home network **206** may be an Internet Protocol (IP) network. In another particular illustrative, non-limiting embodiment, the home network **206** may be a wireless network hosted by a wireless router, which may be within the residential gateway **202** or which may be a separate wireless routing device (not shown) that is coupled to the residential gateway **202**. In a particular embodiment, the wireless network may support communications via an 802.11x protocol.

In a particular embodiment, the residential gateway **202** may be communicatively coupled to the home network **206**. The personal media player **204** may communicate with the residential gateway **202** over the home network **206** via a wireless link **208**. Alternatively, the personal media player **204** may communicate with the residential gateway **202** using a wireless link **212** via a wide area network **210**.

In a particular illustrative embodiment, the residential gateway **202** can be responsive to control signals from the personal media player **204** to generate a user interface including selectable indicators to access and control in-home media devices, such as the first and second home theater systems **214** and **222**, the audio player **218**, and the home computer **220**. In a particular embodiment, the user interface may be displayed on a display **226** of the personal media player **204**, on a display screen of the home computer **220**, on the displays associated with the home theater systems **214** and **222**, or any combination thereof. In a particular illustrative embodiment, a user may select a destination for display of the user interface using the personal media player **204**. In a particular illustrative embodiment, the user interface may be displayed on the personal media player **204** without interrupting the displays of content at the home computer **220** or the first and second home theater systems **214** and **222**.

In a particular illustrative, non-limiting embodiment, the personal media player **204** may include dedicated control keys **230**, such as a volume control key, a channel selection control key, an input source select key, a pause button, a play button, a stop button, a next button, a previous button, a fast forward button, a rewind button, a record button, other dedicated control buttons, or any combination thereof. In general, the personal media player **204** may include other dedicated control buttons, such as the buttons **232** and **234** shown on remote controls **216** and **224**, respectively.

In a particular illustrative embodiment, the residential gateway **202** can be adapted to provide a user interface including a list of available media content, such as audio content stored at the audio player **218**; audio content, video content, or any combination thereof, stored at the home computer **220**; digital video recorder (DVR) content stored at set-top boxes (STBs) associated with the first and second home theater systems **214** and **222**; or any combination thereof. A user may select one or more media content selections via the user interface of the residential gateway **202** using the personal media player **204** and may specify a destination device for the selected media content. In a particular illustrative embodiment, the residential gateway **202** may stream audio data, video data, audio/video data (multimedia data), or any combination thereof to the personal media player **204** via the home network **206**, which may be a wireless network. In a particular illustrative embodiment, the personal media player **204** may display video data via the display **226** and reproduce (playback) audio data via one or more speakers **228**.

In a particular illustrative embodiment, the personal media player **204** may access the residential gateway **202** via the wide area network **210**. For example, a user may take the personal media player **204** to a remote location (e.g., an office, a hotel, or other remote location) that has wireless Internet access, such as via an IEEE 802.11x communications link, a wireless fidelity (WiFi) communications link, a satellite communications link, a cellular communications link, or another wireless communications link. The user may wirelessly connect to the Internet and interact with the residential gateway **202** to access and retrieve media content stored at one or more of the home theater systems **214** and **222**, the audio player **218**, and the home computer **220**. The personal media player **204** may include a storage medium to store received media content for playback at a later time.

Alternatively, the residential gateway **202** may stream the requested media content to the personal media player **204** via the wide area network **210**. The personal media player **204** may also interact with the residential gateway **202** to download media content from other networks via the Internet (wide area network) **210**. For example, a user may utilize the personal media player **204** to control the residential gateway **202** to download particular items from a media content source, such as www.myyahoo.com, napster.com, and other media content sources. The downloaded content may be stored by the residential gateway **202**, streamed to the personal media player **204**, stored at the personal media player **204**, or any combination thereof.

FIG. **3** is a block diagram of a particular illustrative embodiment of a home automation system **300** including a residential gateway **202**. The residential gateway **202** may be coupled to a first remote control device **302** via a wide area network **210**, such as the Internet. The residential gateway **202** may be coupled to one or more processing devices **336** and to a second remote control device **304** via a home network **306**, which may be a wired or wireless network. The residential gateway **202** may also be coupled to one or more electronic devices **326**, **228**, and **330**, such as residential lighting, a coffee pot, a stove, a security system, a heating, ventilation and air conditioning (HVAC) system, and other electronic devices within a customer premises.

The residential gateway **202** may include a wide area network (WAN) interface **308**, a transceiver **310**, and a processor device **312**, which may include a digital signal processor **314** and a general purpose processor **316**. The processor device **312** may also include a graphics processor (not shown). The residential gateway **202** may include a memory **318**; device interfaces **320**, **322**, and **324**; a network interface **334**; and a wireless network interface **338**. In a particular illustrative embodiment, the WAN interface **308** communicatively couples the residential gateway **202** to the wide area network **210**. The device interfaces **320**, **322**, and **324** couple the residential gateway **202** to the electronic devices **326**, **328**, and **330**, respectively. The network interface **334** and the wireless interface **338** may enable the one or more processing devices **336** and the second remote control device **304** to communicate with the residential gateway **202** via the home network **306**.

In a particular illustrative embodiment, the remote control devices **302** and **304** may be personal media players adapted to display video data and to reproduce audio data. The remote control devices **302** and **304** may interact with the residential gateway **202** to control one or more of the electronic devices **326**, **328**, and **330**. In a particular embodiment, for example, the residential gateway **202** may provide a graphical user interface for user interaction via the first remote control **302**. A user may select a selectable indicator associated with a particular electronic device, such as the electronic device **326**, which may be a particular light in a room of a residence. The user may select a particular command to control the electronic device **326**, such as "turn off," "turn on," or "dim." The residential gateway **202** may determine a communication protocol associated with the electronic device **326** from the device protocols **332** stored in the memory **318**, and generate a command via the determined communication protocol to control the electronic device **326** according to the user input. In general, the residential gateway **202** may be adapted to communicate with any device connected to the home network **306**, via a wired or wireless connection or via a wide area network, such as the Internet. If a device protocol is not currently available in the memory **318**, the processor **312** may be adapted to search the Internet (wide area network) **210** to identify an appropriate device protocol and to download the appropriate device protocol. The residential gateway **202** may then utilize the downloaded device protocol to communicate with the electronic device.

In another particular illustrative embodiment, the first remote control device **302** may transmit an access request to the residential gateway **202**. The residential gateway **202** may receive the access request via the WAN interface **308** and the transceiver **310**. The processor device **312** may process the access request according to one or more security features **340**. For example, the processor device **312** may perform an authentication procedure to authenticate the first remote control device **302**. For example, the access request may include a remote device identifier and associated password information. The processor device **312** may compare the remote device identifier and associated password information to a table **342** to authenticate the first remote control device **302**. If the processor device **312** is unable to authenticate the first remote control device **302**, the processor device **312** may either ignore the access request or transmit a refusal to the first remote control device **302**. If the processor device **312** successfully authenticates the first remote control device **312**, the processor device **312** may transmit a graphical user interface to the first remote control device **302**, providing a list of selectable indicators.

If the user selects a media content menu option, the residential gateway **202** may transmit a graphical user interface related to media content options to the first remote control device **302**. If the user selects one or more media content selections, the residential gateway **202** may receive a media content access request associated with stored media content of the home automation system **300**. The processor device **312** may identify one or more media selections from the media access request. The processor device **312** may retrieve the identified media selections from the memory **318** (if the media content is stored in the residential gateway **202**) or from selected processing devices of the one or more processing devices **336** via the home network **306**. The processor device **312** may determine a destination for the retrieved media selections and may transmit the retrieved media selections to the determined destination. In a particular illustrative embodiment, the destination may be the first remote control device **302** and the processor device **312** may stream the selected media content via the transceiver **310** to the first remote control device **302**, which may play the streamed media content via a display at the first remote control device **302** or store the media content.

FIG. **4** is a block diagram of a particular illustrative embodiment of a graphical user interface **400** to access various control functions of a home automation system. The graphical user interface **400** may include graphical or video content, such as the image **402**. Additionally, the graphical user interface **400** may include selectable indicators, such as an email indicator **404**, an Internet indicator **406**, an administration indicator **408**, a help indicator **410**, a home control indicator **412**, a games indicator **414**, a "MY DVR" indicator **416**, a movie/video on demand (VOD) indicator **418**, a channels/Internet Protocol Television (IPTV) indicator **420**, a music indicator **422**, a service connect indicator **424**, and an other indicator **426**. In a particular embodiment, the other indicator **426** may provide access to another control menu related to another controllable feature, such as outdoor lighting, an outdoor sprinkler system, other external systems, or any combination thereof. In another particular embodiment, the other indicator **426** may provide access to a control menu related to a separate facility, such as a

business to allow remote access to business systems (e.g., an office security system, office lighting, and other systems). The indicators may include user selectable buttons, images, menus, other types of selectable elements, or any combination thereof. Additionally, the graphical user interface **400** may include a status bar **428** to indicate recent changes within the system.

In a particular illustrative embodiment, a user may select a user selectable indicator to access a menu or device associated with the particular indicator. For example, selecting the "MY DVR" indicator **416** may cause the residential gateway, such as the residential gateway **202** of FIGS. **2** and **3**, to dynamically generate a list of DVR content stored at a set-top box for selection by a user. Selection of the music indicator **422** may cause the residential gateway to dynamically generate a list of music content stored at an audio device, a computer, a home theater system, or any combination thereof, for selection by a user.

FIG. **5** is a block diagram of a particular illustrative embodiment of a music menu of a graphical user interface **500** to access stored media content via a residential gateway. The graphical user interface **500** may include a title bar **502**, a menu pane **504**, and a data pane **516**. The menu pane **504** may include a main menu indicator **506**, an alphabetical by title indicator **508**, an alphabetical by artist indicator **510**, a list by memory source indicator **512**, and a help indicator **514**. In the embodiment shown by FIG. **5**, the list by memory source indicator **512** is selected, and the data pane **516** includes a list of music organized by memory source **518**. The list includes an expandable list **520** of music stored in an audio player, an expandable list **522** of music stored in a home computer, an expandable list **524** of music stored in a home theater associated with a living room of the user, and an expanded list **526** of music stored in a home theater associated with a master bedroom of the user. The expanded list **526** includes a list of available audio content indicators organized by stored CDs, including an expandable list of "Classical Selections" indicator **528**, an expandable list of "Cold Play" indicator **530**, an expandable list of "Rolling Stones" indicator **532**, an expandable list of "Sheryl Crow" indicator **534**, an expandable list of "Van Morrison" indicator **536**, and other available audio content indicators that are outside of the visible area of the data pane **516**.

In a particular illustrative embodiment, a user may access the music menu graphical user interface **500** via a remote control device, such as the personal media player **204** of FIG. **2**. A user may select elements or indicators within the graphical user interface **500** to access and retrieve audio content for playback via the personal media player. Alternatively, a user may select indicators within the graphical user interface **500** and direct the residential gateway to transmit the retrieved audio content to another destination, such as a home stereo system, a television, or other devices.

FIG. **6** is a block diagram of a particular illustrative embodiment of a home automation system **600** including a residential gateway **202** and a personal media player (remote control) device **602**, such as the personal media player **204** of FIG. **2**. The personal media player device **602** may communicate with the residential gateway **202** via a network **604**, which may be the Internet or a home network. The personal media player device **602** may include a wireless transceiver **606**, a processor **608**, a display **610**, a memory **612**, a power controller **614**, a speaker **616**, a user input interface **618**, a universal serial bus (USB) interface **620**, a video output **622**, and an audio output **624**. The memory **612** may include a browser application **626**, a media player application **628**, access controls **630** and security features **632**. The processor **608** may be coupled to the wireless transceiver **606**, the display **610**, the memory **612**, the power controller **614**, the speaker **616**, the user input interface **618**, the USB interface **620**, the video output interface **622**, and the audio output interface **624**. The personal media player **602** may also include a device interface **634** (such as an infrared interface, a Bluetooth wireless interface, or another type of interface) to communicate with a device **636** via a wireless communications link **638**. For example, the device **636** may be a television and the personal media player device **602** may control the volume or control the channel selections directly. Alternatively, the device **636** may be a video cassette recorder (VCR) device, a digital video disk (DVD) player, a stereo, or another media device, which the personal media player **602** may control via the user input interface **618** to directly alter the operation of the device. In a particular illustrative embodiment, the personal media player **602** may control one or more devices and a user may select which device to control. In a particular illustrative embodiment, a user may configure the personal media player device **602** to interact directly with one or more electronic devices by entering a program code associated with a brand and model of the device to be controlled.

In a particular embodiment, the personal media player **602** may receive media content from the residential gateway **202** via the network **604** and may store the received media content in the memory **612**. The personal media player **602** may process the received media content using the processor **608** to provide video data to the display **610** and audio data to the speaker **616**. In an alternative illustrative embodiment, the processor **608** may provide the video data to the video output interface **622** and the audio data to the audio output interface **624** to provide video and audio data to peripheral devices, such as an external display and an external speaker.

In a particular illustrative embodiment, the processor **608** may load a browser application **626** from the memory **612** to provide a graphical user interface including user selectable indicators to the display **610**. The personal media player **602** may receive user input, including user selections related to the user selectable indicators of the graphical user interface via the user input interface **618**. In a particular illustrative, non-limiting embodiment, the user input interface **618** may include a keypad, a selection pad, a pen device, a touch screen, other input device, or any combination thereof.

The processor **608** may load a media player application **628** from the memory **612** to decode audio data into an audible format and to play the decoded audio data via the speaker **616**. The personal media player **602** may include access controls **630** to control when particular devices may be accessed via the residential gateway **202**, to control access to particular stored media, and the like. Additionally, the personal media player **602** may include security features **632**, such as a user name and password, to prevent unauthorized access to data stored on the personal media player **602** and to prevent unauthorized access to the residential gateway **202**, if the personal media player **602** is lost or stolen.

In a particular illustrative, non-limiting embodiment, the personal media player **602** may be coupled to a personal computer or a memory device via the USB interface **620** to receive stored data, including stored media content, from the attached device. Alternatively, the USB interface **620** may be utilized to export stored data to an external device.

The power controller **614** may be utilized to monitor a status of a power source, such as a battery, and to provide a visible power indicator to the display **610**. In a particular illustrative embodiment, the power controller **614** may

monitor the personal media player **602** for periods of inactivity and may selectively deactivate components of the personal media player **602** to conserve power when the personal media player **602** is inactive for a predetermined period of time. For example, the power controller **614** may shut off power to the display **610**, the speaker **616**, the processor **608**, the memory **602**, or any combination thereof.

In a particular illustrative embodiment, the processor **608** may be adapted to selectively transmit instructions to control a particular device, such as the device **636**, via either the residential gateway **202** over the network **604** or directly via the device interface **634** and the wireless link **638**. For example, the processor **608** may selectively transmit the command via the residential gateway **202** when the remote control device **602** is outside of the vicinity of the particular device **636**. In another particular embodiment, the processor **608** may selectively transmit dedicated control commands directly via the device interface **634** and may transmit menu selections to the residential gateway **202**.

FIG. **7** is a general diagram of a particular illustrative embodiment of a personal media player device **700**. The personal media player device **700** includes a housing **702**, a plurality of keys (buttons) **704**, a display **706**, and a speaker **738**. The plurality of keys **704** includes a menu navigation button **708** and a plurality of dedicated control buttons, such as an input source select button **710**, a previous button **712**, a rewind button **714**, a play button **716**, a pause button **718**, a stop button **720**, a fast forward (FF) button **722**, a next button **724**, a record button **726**, an increase volume button **728**, a decrease volume button **730**, an increase channel button **732**, and a decrease channel button **734**. The personal media player **700** also includes a plurality of alphanumeric keys **736**.

In a particular illustrative embodiment, the input source select key **710** may select between multiple source inputs for a particular electrical device, such as a video cassette recorder (VCR) input, a digital video disc (DVD) player input, an antenna input, a cable input, other inputs, or any combination thereof. In particular illustrative embodiment, the volume control buttons **728** and **730** may be combined into a single tri-state switch to control a volume of a particular device. In a particular illustrative embodiment, the channel control buttons **732** and **734** may be combined into a single tri-state switch to control a channel of a particular device. The buttons **712**, **714**, **716**, **718**, **720**, **722**, and **724** may be utilized to control a DVD player, a compact disk (CD) player, a set-top box, another device, or any combination thereof. The buttons **714**, **716**, **718**, **720**, **722**, and **726** may be utilized to control, for example, a VCR device.

The alphanumeric buttons **736** may be utilized to enter a channel directly, when controlling a television, for example. In a particular illustrative embodiment, the alphanumeric buttons **736** may be used to enter a name of a selection of music that may be downloaded to the personal media player **700** and stored for playback at a later time. Alternatively, the alphanumeric buttons **736** may be utilized to access search features or network browsing features to allow a user to access the Internet to initiate downloads of audio data to a residential gateway, such as the residential gateway **202** in FIGS. **2** and **3**.

FIG. **8** is a flow diagram of a particular illustrative embodiment of a method of processing an access request received from a remote control device. The residential gateway receives an access request from a remote control device, at **800**. The residential gateway authenticates the remote control device, at **802**. If the remote control device not authenticated at **804**, the method terminates at **820**.

Returning to **804**, if the remote control device is authenticated, the residential gateway provides a user interface including a plurality of selectable indicators to the remote device, at **806**. The residential gateway receives a user input selecting at least one selectable indicator, at **808**. The residential gateway provides a menu corresponding to the selection, where the menu includes selectable items, at **810**. The residential gateway receives a next input selecting at least one selectable item based on the menu, at **812**. The selection may be related to a command to control a device, such as a heating, ventilation and air conditioning (HVAC) system. The residential gateway determines a communication protocol of the device to be controlled, at **814**. The residential gateway communicates with the device via the determined communication protocol, at **816**. The residential gateway provides feedback to the remote control device, at **818**. The feedback may include an acknowledgement that a particular control instruction was executed, for example. The method terminates at **820**.

FIG. **9** is a flow diagram of a particular illustrative embodiment of a method of processing a media content request received from a remote control device. A residential gateway receives a media access request from a remote control device at **900**, where the media access request includes a media content identifier and a destination to which media content associated with the media content identifier should be sent. The residential gateway identifies media content related to the media access request, at **902**. The residential gateway determines one or more storage locations of the identified media content, at **904**. The residential gateway retrieves the identified media content from the one or more storage locations, at **906**. The residential gateway streams the identified media content to the destination based on the media access request, at **908**. In a particular illustrative embodiment, the residential gateway may stream the identified media content to the remote control device, which may be adapted to display video content and play audio content. The method terminates at **910**.

FIG. **10** is a flow diagram of a particular illustrative embodiment of a method of accessing media content of a home automation system using a remote control device, such as the personal media player of FIG. **6**. A remote control device accesses a user interface associated with a home automation system via a network, at **1000**. The user interface may include a list of selectable media content. The remote control device may display the user interface, at **1002**. The remote control device may receive a user input related to a selection of at least one item from the list, at **1004**. The remote control device may transmit the selection to the home automation system via the network as a media content access request, where the selection includes a destination device, at **1006**. The remote control device may receive the media content related to the selection from the home automation system via the network for audio playback via an audio output, when the destination device is the remote control device, at **1008**. The method terminates at **1010**.

In a particular embodiment, the remote control device may specify an alternative destination device, such as a television, a set-top box, a portable audio player, a home computer, or another electronic device. In a particular illustrative embodiment, the remote control device may store the media content for playback at a later time.

Referring to FIG. **11**, an illustrative embodiment of a general computer system is shown and is designated **1100**, which may be utilized within a residential gateway system,

such as residential gateway **202** in FIGS. **2-4**, or within a remote control device, such as the remote control device **204** in FIG. **2**, the remote control devices **302** and **304** in FIG. **3**, and the remote control device **602** in FIG. **6**. The computer system **1100** can include a set of instructions that can be executed to cause the computer system **1100** to perform any one or more of the methods or computer based functions disclosed herein. The computer system **1100** may operate as a standalone device or may be connected, e.g., using a network, to other computer systems or peripheral devices.

In a networked deployment, the computer system may operate in the capacity of a server or as a client user computer in a server-client user network environment, or as a peer computer system in a peer-to-peer (or distributed) network environment. The computer system **1100** can also be implemented as or incorporated into various devices, such as a personal computer (PC), a tablet PC, a set-top box (STB), a personal digital assistant (PDA), a mobile device, a palmtop computer, a laptop computer, a desktop computer, a communications device, a wireless telephone, a land-line telephone, a control system, a camera, a scanner, a facsimile machine, a printer, a pager, a personal trusted device, a web appliance, a network router, switch or bridge, or any other machine capable of executing a set of instructions (sequential or otherwise) that specify actions to be taken by that machine. In a particular embodiment, the computer system **1100** can be implemented using electronic devices that provide voice, video or data communication. Further, while a single computer system **1100** is illustrated, the term "system" shall also be taken to include any collection of systems or sub-systems that individually or jointly execute a set, or multiple sets, of instructions to perform one or more computer functions.

As illustrated in FIG. **11**, the computer system **1100** may include a processor **1102**, e.g., a central processing unit (CPU), a graphics processing unit (GPU), or both. Moreover, the computer system **1100** can include a main memory **1104** and a static memory **1106**, that can communicate with each other via a bus **1108**. As shown, the computer system **1100** may further include a video display unit **1110**, such as a liquid crystal display (LCD), an organic light emitting diode (OLED), a flat panel display, a solid state display, or a cathode ray tube (CRT). Additionally, the computer system **1100** may include an input device **1112**, such as a keyboard, and a cursor control device **1114**, such as a mouse. The computer system **1100** can also include a disk drive unit **1116**, a signal generation device **1118**, such as a speaker or remote control, and a network interface device **1120**.

In a particular embodiment, as depicted in FIG. **11**, the disk drive unit **1116** may include a computer-readable medium **1122** in which one or more sets of instructions **1124**, e.g. software, can be embedded. Further, the instructions **1124** may embody one or more of the methods or logic as described herein. In a particular embodiment, the instructions **1124** may reside completely, or at least partially, within the main memory **1104**, the static memory **1106**, and/or within the processor **1102** during execution by the computer system **1100**. The main memory **1104** and the processor **1102** also may include computer-readable media.

In an alternative embodiment, dedicated hardware implementations, such as application specific integrated circuits, programmable logic arrays and other hardware devices, can be constructed to implement one or more of the methods described herein. Applications that may include the apparatus and systems of various embodiments can broadly include a variety of electronic and computer systems. One or more embodiments described herein may implement functions using two or more specific interconnected hardware modules or devices with related control and data signals that can be communicated between and through the modules, or as portions of an application-specific integrated circuit. Accordingly, the present system encompasses software, firmware, and hardware implementations.

In accordance with various embodiments of the present disclosure, the methods described herein may be implemented by software programs executable by a computer system. Further, in an exemplary, non-limited embodiment, implementations can include distributed processing, component/object distributed processing, and parallel processing. Alternatively, virtual computer system processing can be constructed to implement one or more of the methods or functionality as described herein.

The present disclosure contemplates a computer-readable medium that includes instructions **1124** or receives and executes instructions **1124** responsive to a propagated signal, so that a device connected to a network **1126** can communicate voice, video or data over the network **1126**. Further, the instructions **1124** may be transmitted or received over the network **1126** via the network interface device **1120**.

While the computer-readable medium is shown to be a single medium, the term "computer-readable medium" includes a single medium or multiple media, such as a centralized or distributed database, and/or associated caches and servers that store one or more sets of instructions. The term "computer-readable medium" shall also include any medium that is capable of storing, encoding or carrying a set of instructions for execution by a processor or that cause a computer system to perform any one or more of the methods or operations disclosed herein.

In a particular non-limiting, exemplary embodiment, the computer-readable medium can include a solid-state memory such as a memory card or other package that houses one or more non-volatile read-only memories. Further, the computer-readable medium can be a random access memory or other volatile re-writable memory. Additionally, the computer-readable medium can include a magneto-optical or optical medium, such as a disk or tapes or other storage device to capture carrier wave signals such as a signal communicated over a transmission medium. A digital file attachment to an e-mail or other self-contained information archive or set of archives may be considered a distribution medium that is equivalent to a tangible storage medium. Accordingly, the disclosure is considered to include any one or more of a computer-readable medium or a distribution medium and other equivalents and successor media, in which data or instructions may be stored.

Although the present specification describes components and functions that may be implemented in particular embodiments with reference to particular standards and protocols, the invention is not limited to such standards and protocols. For example, standards for Internet and other packet switched network transmission (e.g., TCP/IP, UDP/IP, HTML, HTTP) represent examples of the state of the art. Such standards are periodically superseded by faster or more efficient equivalents having essentially the same functions. Accordingly, replacement standards and protocols having the same or similar functions as those disclosed herein are considered equivalents thereof.

The illustrations of the embodiments described herein are intended to provide a general understanding of the structure of the various embodiments. The illustrations are not intended to serve as a complete description of all of the elements and features of apparatus and systems that utilize

the structures or methods described herein. Many other embodiments may be apparent to those of skill in the art upon reviewing the disclosure. Other embodiments may be utilized and derived from the disclosure, such that structural and logical substitutions and changes may be made without departing from the scope of the disclosure. Additionally, the illustrations are merely representational and may not be drawn to scale. Certain proportions within the illustrations may be exaggerated, while other proportions may be minimized. Accordingly, the disclosure and the figures are to be regarded as illustrative rather than restrictive.

One or more embodiments of the disclosure may be referred to herein, individually and/or collectively, by the term "invention" merely for convenience and without intending to voluntarily limit the scope of this application to any particular invention or inventive concept. Moreover, although specific embodiments have been illustrated and described herein, it should be appreciated that any subsequent arrangement designed to achieve the same or similar purpose may be substituted for the specific embodiments shown. This disclosure is intended to cover any and all subsequent adaptations or variations of various embodiments. Combinations of the above embodiments, and other embodiments not specifically described herein, will be apparent to those of skill in the art upon reviewing the description.

The Abstract of the Disclosure is provided to comply with 37 C.F.R. § 1.72(b) and is submitted with the understanding that it will not be used to interpret or limit the scope or meaning of the claims. In addition, in the foregoing Detailed Description, various features may be grouped together or described in a single embodiment for the purpose of streamlining the disclosure. This disclosure is not to be interpreted as reflecting an intention that the claimed embodiments require more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive subject matter may be directed to less than all of the features of any of the disclosed embodiments. Thus, the following claims are incorporated into the Detailed Description, with each claim standing on its own as defining separately claimed subject matter.

The above-disclosed subject matter is to be considered illustrative, and not restrictive, and the appended claims are intended to cover all such modifications, enhancements, and other embodiments which fall within the true spirit and scope of the present invention. Thus, to the maximum extent allowed by law, the scope of the present invention is to be determined by the broadest permissible interpretation of the following claims and their equivalents, and shall not be restricted or limited by the foregoing detailed description.

What is claimed is:

1. A device comprising:

a first interface to connect to a wide area network and to communicate with a residential gateway via the wide area network, wherein the first interface is configured to communicate with a first electronic device via the residential gateway; and

a processor coupled to the first interface, wherein the processor is configured to perform operations including:

initiating transmission of a request to the first electronic device via the wide area network responsive to the processor being disconnected from a local area network;

initiating transmission of a second request to a second electronic device via the first interface, wherein the second electronic device is located in a facility remote to the residential gateway; and

receiving media content from the second electronic device responsive to the second request.

2. The device of claim **1**, further comprising a second interface to communicate wireless commands to the first electronic device, wherein the operations further include initiating transmission of a third request to the first electronic device via the second interface while the device is proximate to the first electronic device.

3. The device of claim **2**, wherein the second interface includes an infrared transmitter.

4. The device of claim **2**, further comprising a third interface to connect to the local area network and to communicate with the first electronic device via the local area network, wherein the operations further include initiating transmission of a fourth request to the first electronic device via the third interface while the device is connected to the local area network.

5. The device of claim **1**, wherein the second electronic device includes a security system, and wherein the media content comprises security camera footage.

6. The device of claim **1**, wherein the operations further include:

transmitting user authentication information to the residential gateway; and

receiving a graphical interface from the residential gateway responsive to authentication of the user authentication information by the residential gateway.

7. The device of claim **1**, further comprising transmitting, to the second electronic device, a command to a security system associated with the second electronic device, a lighting system associated with the second electronic device, or a combination thereof.

8. The device of claim **1**, wherein the media content includes a status bar that indicates recent events identified by the second electronic device.

9. The device of claim **1**, wherein the operations further include displaying a content list via a display device coupled to the processor.

10. The device of claim **1**, further comprising a display device coupled to the processor, wherein the operations further include:

receiving a media content menu from the residential gateway;

displaying the media content menu via the display device;

receiving user input indicating selection of the media content from the media content menu; and

initiating display of the media content via the display device.

11. The device of claim **1**, further comprising receiving second media content to be displayed via a display device coupled to the processor, wherein the second media content is sent from the first electronic device responsive to the request.

12. The device of claim **1**, further comprising an audio output device coupled to the processor, the audio output device including a speaker.

13. The device of claim **1**, wherein the operations further include:

sending a user interface to a display device coupled to the processor, the user interface including a selectable indicator associated with operation of an electronic device;

receiving a selection related to the selectable indicator; and

transmitting a particular command via the first interface to control the electronic device based on the selection.

14. The device of claim **1**, wherein the first electronic device includes a video storage device, a digital video disk player, a set-top box, a television, or a combination thereof.

15. A method comprising:

sending, responsive to a remote control device being disconnected from a local area network, first instructions from the remote control device to a first electronic device via a wireless transceiver, via a residential gateway, and via a wide area network;

sending second instructions from the remote control device to a second electronic device via the wide area network, wherein the second electronic device is located in a facility remote to the residential gateway; and

receiving media content from the first electronic device in response to the first instructions.

16. The method of claim **15**, further comprising:

receiving a media content menu from the residential gateway; and

receiving a selection of the media content based on the media content menu.

17. The method of claim **15**, wherein the second electronic device includes a security system, and wherein the media content comprises security camera footage.

18. A computer-readable storage hardware device storing instructions that, when executed by a processor, cause the processor to perform operations comprising:

receiving first input at a control device, the first input corresponding to a first command for a first electronic device located within a premises;

sending first instructions to the first electronic device via a wireless transceiver and via a wide area network, the first instructions sent responsive to the control device being disconnected from a local network;

sending second instructions to a second electronic device via the wide area network, wherein the second electronic device is located in a facility remote to the premises; and

receiving media content from the first electronic device in response to the first instructions.

19. The computer-readable storage hardware device of claim **18**, the second electronic device includes a security system, and wherein the media content comprises security camera footage.

20. The computer-readable storage hardware device of claim **18**, wherein the operations further comprise sending a user interface to a display device, the user interface configured to display selections to control the first electronic device, and wherein the first input is received via the user interface.

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